REMARKS

The August 6, 2004 Office Action regarding the above-identified application has been carefully considered, and the claim amendments above together with the remarks that follow are presented in a bona fide effort to respond thereto and address all issues raised in that Action. Claims 1-15 and 25 have been cancelled to reduce issues. Independent claims 16, 20, 26 and 28 have been amended to address art rejections. Several dependent claims have been amended and dependent claims 22-24 have been cancelled, in view of the amendments to respective independent claims. Independent claim 27 has been amended to improve internal consistency. For reasons discussed below, it is believed that this response overcomes all rejections set forth in the latest Action. Prompt favorable reconsideration of this amended application is requested.

Claims 1-3, 5, 6, 11-15 and 25 were rejected under 35 U.S.C. § 103 as unpatentable over USP 5,095,535 to Freeburg in combination with USP 6,611,511 to Schulz. Claim 4 then was rejected as unpatentable over the combination of Freeburg and Schulz, further in view of USP 4,317,229 to Craig et al. Claims 7-10 were rejected for alleged obviousness over Freeburg in combination with Schulz, further in view of USP 4,485,486 to Webb et al. All of these rejections are moot in view of the cancellation of claims 1-15 and 25.

Claims 16-19, 26 and 29 were rejected under 35 U.S.C. § 103 as unpatentable over USP 4,485,486 to Webb et al. in combination with USP 6,611,511 to Schulz. Independent claims 16 and 26 have been amended to clarify the distinction of these claims over the applied patents. This rejection is traversed.

Claims 16 and 26 been amended to more explicitly state that the assessment of movement is based on the calculated rates of change of signal strength and that the aspect of handoff is controlled based on that assessment of movement, i.e. on the assessment obtained from the calculated rates of

signal changes. It is respectfully submitted that neither Webb et al. nor Schulz uses rates of signal changes.

The Webb et al. patent discloses a technique for assigning channels through a smart antenna system and controlling handoff operations. A microprocessor controlled base site controller periodically monitors the mobile station signal strength. When signal strength degradations are detected, the controller either changes the base station sector antennas coupled to voice transceivers, increases or decreases radiotelephone power output, or hands the radiotelephone off to another cell. Contrary to comments in the rejection, the text of the Webb et al. patent teaches only measuring signal strength or magnitude and comparison thereof to a threshold. To emphasize the point, it may be helpful to consider each of the portions of the Webb et al. patent, which the rejection (item #6) cited in support of the allegation that the patent teaches calculating rates of signal changes (see last two lines of page 11 and first two lines of page 12 of the Office Action).

For example, the rejection cites lines 29-27 of the abstract, which read:

> ... In practicing the methods of the present invention, the microprocessor controlled base site controller maintains high quality communications paths to mobile and portable radiotelephones by periodically monitoring their **signal strength** and **when signal strength degradations** are detected, either changing the base station sector antennas coupled to voice transceivers, increasing or decreasing radiotelephone power output, or handing radiotelephones off to another cell. (Emphasis added)

As shown by the highlighted portions of the above-quoted text, the Webb et al. patent only teaches monitoring signal strength, not assessment of movement based on a calculation of rates of signal changes.

The paragraph bridging columns 2 and 3 of the Webb et al. patent, which includes text in lines 57-68, which was cited in the rejection reads as follows:

> Another unique method performed by the cell control circuitry comprises the steps of: assigning one of the RF signal channels to each requesting remote station; sampling N times the **strength** of the RF signal received by each antenna

> from each remote station assigned an RF signal channel, where N is an integer number greater than one; selecting for each remote station the antenna for which at least one of its N sampled **signal strengths** has a magnitude greater than the magnitude of any of the N sampled **signal strengths** for all other antennas; comparing the magnitude of the largest sampled **signal strength** of the selected antenna for each such remote station to a predetermined magnitude; and either requesting one other cell control circuitry to sample the **signal strength** of a remote station when the magnitude of the largest sampled **signal strength** of the selected antenna is less than a predetermined magnitude, or transmitting a control signal to a remote station for causing said remote station to increase or decrease the **strength** of its transmitted RF signal when the magnitude of the largest sampled **signal strength** of the selected antenna is less than a predetermined minimum magnitude or greater than a predetermined maximum magnitude, respectively. This inventive method insures that the **signal strength** of each active remote station is maintained at an adequate level for good quality communications. (Emphasis added)

Again, the highlighted portions of the above-quoted text show that the Webb et al. patent only teaches monitoring signal strength, not assessment of movement based on a calculation of rates of signal changes.

Column 5, lines 9-20, was also cited for alleged disclosure of calculating rates of signal changes. However, this cited text from the Webb et al. patent only states:

> In order to determine whether or not a mobile or portable radiotelephone leaves one cell, e.g. 20, and enters another, e.g. 10 or 30, the **signal strength** of the mobile or portable radiotelephone must be monitored by the base site controller 122. When the **signal strength** of a mobile or portable radiotelephone **becomes too weak**, the receiving sector antenna may be changed, or the strength of its transmitted signal may be increased by a control signal transmitted from the base site controller 122, or the mobile or portable radiotelephone can be handed off to a base site controller 112 or 132 in another cell. ...(Emphasis added)

Again, the cited portion of the Webb et al. patent teaches monitoring the signal strength. A change, such as handoff, is made when the **signal strength** of a mobile or portable radiotelephone **becomes too weak**. This is not a disclosure of calculating rates of signal changes.

The rejection also cited Fig. 3a and a portion of the description thereof in lines 12-68 of column 8. The drawing does not show calculation of rates of signal changes, assessment of movement based on such calculated rates or controlling an aspect of handoff responsive to the

assessed movement based on the calculated rates of signal changes. To the contrary, like the texts quoted above, the relevant portions of column 8 again refer repeatedly to signal strength, not rates of signal changes. By way of example, consider the portion of the text of column 8, excerpted from lines 50-58, which reads:

> The scanning method of the present invention quickly and efficiently takes signal strength measurements on each sector antenna for a selected station, and, on the basis of the measured signal strength, either takes no further action, or changes sector antennas, or raises or lowers the power of the signal transmitted from the selected station, or hands off the selected station to another cell so as to optimize its signal strength for good voice communications... (Emphasis added)

As shown by the above analysis of the text applied to purportedly meet the claim requirements regarding calculating rates of signal changes, the Webb et al. patent does not in fact teach calculating rates of signal changes. Webb et al. only use actual signal strength measurements.

Schulz also does not assess movement based on detected rate of change. Schulz teaches changing an antenna configuration for communication with the mobile station as it moves, however, the only assessment of movement depends on where or in what different locations the mobile station is 'found' (see column 4, lines 1-21). Hence, Webb and the combination thereof with Schulz would not satisfy any of the requirements of either independent claim 16 or independent claim 26 relating to rates of signal changes. There is no teaching to calculate rates of signal changes, to assess movement based on rates of signal changes or to control an aspect of a handoff based on the assessment of movement based on such changes.

The Examiner maintains that certain portions of the Webb et al. patent disclose assessing movement. The cited portions of the Webb et al. patent mention that the station moves, but as it moves, the processing only assesses actual signal strength (see e.g. column 5, lines 30-44). This is not enough to meet the requirement of claims 16 and 26 that the assessment of movement is based on the calculated rates of signal changes. Since Schulz only determines location (where 'found) and

does not calculate rates of signal changes, Schulz again fails to make up for the deficiency of the teachings of the Webb et al. document.

The Examiner acknowledges that the Webb et al. technique does not involve basing handoff on assessed movement of the mobile station, in a spread spectrum system. The Examiner instead points to certain text in Schulz and alleges that the claimed features would have been obvious. Schulz does disclose a spread spectrum system. However, it is submitted that Schultz does not assess movement based on detected rate of signal change. Schulz only teaches changing the antenna configuration for communication with the mobile station as it moves (and is 'found' in different locations, column 4, lines 1-21). Even if Schulz is used to convert Webb to a spread-spectrum system, the resulting modified system would still not calculate rates of signal changes, assess movement based on rates of signal changes, or control an aspect of a handoff based on the assessment of movement based on such changes, as claimed.

In view of the claim distinctions not actually taught by either Webb et al. or Schulz, the 103 rejection over the proposed combination of those two patents is improper and should be withdrawn. It is respectfully submitted that claims 16 and 26 patentably distinguish over the art, particularly the applied Webb et al. and Schulz patents. Claims 17-19 and 29 depend from claim 16 and should be patentable for at least the same reasons.

Claims 20-24 and 28 stand rejected under 35 U.S.C. § 103 as unpatentable over USP 6,611,511 to Schulz in combination with USP 5,794,153 to Ariyavisitakul et al. (hereinafter Ariyavisitakul). Of these rejected claims, dependent claims 22-24 have been cancelled. Independent claims 20 and 28 have been amended to distinguish the respectively claimed subject matter over the applied combinations of patents. In view of these amendments, it is submitted that the art rejection is overcome and that claims 20, 21 and 28 are patentable over the art.

In this rejection, the Examiner cited Schulz for its disclosure of the elements of a basic CDMA network that uses a sectorized antenna system. Ariyavisitakul discloses a PCS system with simulcasting microcells and focuses on dynamic resource allocation among such cells based on estimates of local traffic load. The Examiner held that it would have been obvious to apply the dynamic resource allocation based on estimates of local traffic load to establish and manipulate serving sectors, in the sectorized CDMA network of Schulz. It is respectfully submitted that this proposed combination would not satisfy all of the express limitations of amended claims 20 and 28.

Claim 20 relates to a method for arranging sector antennas into serving sectors of a cell base station, by measuring a traffic load in each serving sector and analyzing the measured traffic loads. Claim 28 is a program type claim, where execution of the program implements steps substantially similar to those in the method of claim 20. Essentially, the limitations of claims 23 and 24 have been added into each of independent claims 20 and 28. These independent claims now specify a threshold determination and reassignment to keep traffic levels of all cells below the threshold.

By contrast, Ariyavisitakul teaches reassignment when the estimated traffic level "approaches the maximum traffic capacity" (see column 6, lines 39-52; and column 9, lines 7-16). Also, that patent indicates that the objective is to achieve balanced traffic loads (see e.g. column 4, lines 54-59). The patent is silent as to how the system chooses the new assignments to achieve balance, and as a result, there is no express teaching that the calculated new arrangement is one wherein the traffic load in every one of the serving sectors is below the predetermined threshold, as claimed.

The rejection (top of page 17) interprets Ariyavisitakul as teaching "a balanced load arrangement to include calculating an arrangement wherein the traffic load between adjacent sectors is substantially equal." Such a teaching by Ariyavisitakul fails to meet the specific claim

requirements. The substantially "equal" balance does not necessarily insure that the traffic load in every one of the serving sectors is below the predetermined threshold, as claimed.

As noted, Schulz was cited only for its disclosure of the elements of a basic CDMA network that uses a sectorized antenna system. Such a teaching of Schulz likewise would not lead one of skill in the art to calculate the new arrangement so that the traffic load in every one of the serving sectors is below the predetermined threshold, as claimed.

For these reasons, it is respectfully submitted that the combination of Schulz and Ariyavisitakul would not satisfy all the limitations of any of claims 20, 21 and 28; therefore those claims patentably distinguish over the applied art.

The continued allowance of claim 27 is noted with appreciation. A minor change is made above in claim 27, to make the preamble consistent with the next to last line of the claim. However, this change is not substantive, and the allowable claim should retain the scope of coverage it had at the time or original filing of this application. At item #8 (on page 19), the August 6, 2004 Office Action contains a copy of "Reasons for Allowance," which first appeared in the February 26, 2004 Office Action. For reasons stated in the previous response, entry of any such statement of Reasons for Allowance should not be construed as any agreement with or acquiescence by Applicants in the stated reasoning. It is respectfully submitted that claim 27 should be entitled the broadest reasonable interpretation and broadest range of equivalents that are appropriate in light of the language of the claim and the supporting disclosure, without reference to any statement of Reasons for Allowance.

Upon entry of the above claim amendments, claims 16-21 and 26-29 remain active in this application, all of which should be patentable over the art applied in the Action. It is submitted that

all of the claims are in condition for allowance. Accordingly, this case should now be ready to pass to issue; and a prompt favorable reconsideration of this matter is requested.

It is believed that this response addresses all issues raised in the August 6, 2004 Office Action. However, if any further issue should arise that may be addressed in an interview or an Examiner's amendment, it is requested that the Examiner telephone Applicants' representative at the number shown below.

To the extent necessary, if any, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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